



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-3753; Directorate Identifier 2015-NE-26-AD; Amendment 39-18406; AD 2016-04-12]

RIN 2120-AA64

Airworthiness Directives; Turbomeca S.A. Turboshift Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Turbomeca S.A. Arriel 2B, 2B1, 2C, 2C1, 2C2, 2D, 2E, 2S1, and 2S2 turboshaft engines. This AD requires inspection, and, depending on the results, removal of the engine accessory gearbox (AGB). This AD was prompted by a report of an uncommanded in-flight shutdown (IFSD) of an Arriel 2 engine caused by rupture of the 41-tooth gear, which forms part of the bevel gear in the engine AGB. We are issuing this AD to prevent failure of the engine AGB, which could lead to in-flight shutdown, damage to the engine, and damage to the aircraft.

DATES: This AD becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Turbomeca S.A., 40220 Tarnos, France; phone: 33 0 5 59 74 40 00; fax: 33 0 5 59 74 45 15. You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-3753.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-3753; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Philip Habermen, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7770; fax: 781-238-7199; email: philip.habermen@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to the specified products. The NPRM was published in the *Federal Register* on November 24, 2015 (80 FR 73148). The NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

An uncommanded in-flight shut-down (IFSD) of an ARRIEL 2 engine was reported, caused by rupture of the 41-tooth gear, which forms part of the bevel gear of the accessory gearbox (module M01). The subsequent investigation revealed that wear on the housing of the front bearing of this gear was a major contributor to this rupture. In addition, the investigation showed that this wear mechanism had resulted in positive Spectrometric Oil Analysis (SOA) indications before the event.

This condition, if not detected and corrected, could potentially lead to further cases of IFSD, possibly resulting in an emergency landing.

You may obtain further information by examining the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-3753.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (80 FR 73148, November 24, 2015).

Conclusion

We reviewed the available data and determined that air safety and the public interest require adopting this AD as proposed.

Related Service Information under 1 CFR Part 51

Turbomeca S.A. has issued Mandatory Service Bulletin No. 292 72 2861, Version A, dated April 24, 2015. The service information describes procedures for inspecting the engine AGB. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section of this final rule.

Costs of Compliance

We estimate that this AD affects 250 engines installed on aircraft of U.S. registry. We also estimate that it will take about 0.5 hours per engine to comply with the initial inspection requirement in this AD and about 2 hours per engine to remove the engine AGB. The spectrometric oil analysis kit costs about \$79. The average labor rate is \$85 per hour. Based on these figures, we estimate the cost of this AD on U.S. operators to be \$72,875.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2016-04-12 Turbomeca S.A.: Amendment 39-18406; Docket No. FAA-2015-3753; Directorate Identifier 2015-NE-26-AD.

(a) Effective Date

This AD becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Turbomeca S.A. Arriel 2B, 2B1, 2C, 2C1, 2C2, 2D, 2E, 2S1, and 2S2 turboshaft engines with an engine accessory gearbox (AGB), part number (P/N) 0292120650, with a machined front casing.

(d) Reason

This AD was prompted by a report of an uncommanded in-flight shutdown (IFSD) of an Arriel 2 engine caused by rupture of the 41-tooth gear, which forms part of the bevel gear in the engine AGB. We are issuing this AD to prevent failure of the engine AGB, which could lead to IFSD, damage to the engine, and damage to the aircraft.

(e) Actions and Compliance

Comply with this AD within the compliance times specified, unless already done.

(1) Initial Spectrometric Oil Analysis (SOA)

(i) Perform an initial SOA within the compliance times given in paragraph (e)(1)(i)(A) or (e)(1)(i)(B) of this AD:

(A) If the engine AGB has less than 800 engine hours (EHs) since new or since last overhaul, do an initial SOA before exceeding 850 EHs since new or since last overhaul.

(B) If the engine AGB has 800 EHs or more since new or since last overhaul, or if the EHs are unknown, do an initial SOA within 50 EHs after the effective date of this AD.

(C) Use paragraphs 2.4.2.1 and 2.4.2.2 of Turbomeca S.A. Mandatory Service Bulletin (MSB) No. 292 72 2861, Version A, dated April 24, 2015, to perform the SOA required by paragraph (e) of this AD.

(ii) Reserved.

(2) Repetitive SOA

(i) If the aluminum concentration determined from the most recent SOA is less than 0.8 parts per million (PPM), repeat the SOA required by paragraph (e) of this AD within 100 EHs time since last analysis (TSLA).

(ii) If the aluminum concentration determined from the most recent SOA is between 0.8 PPM and 1.4 PPM, inclusive, repeat the SOA required by paragraph (e) of this AD within 50 EHs TSLA. Do not perform draining before doing the next SOA.

(iii) If the aluminum concentration determined from the most recent SOA is greater than 1.4 PPM, remove the engine AGB from service within 50 EHs TSLA.

(f) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

(g) Related Information

(1) For more information about this AD, contact Philip Habermen, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7770; fax: 781-238-7199; email: philip.habermen@faa.gov.

(2) Refer to MCAI European Aviation Safety Agency AD 2015-0162, dated August 6, 2015, for more information. You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2015-3753-0001>.

(h) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Turbomeca S.A. Mandatory Service Bulletin No. 292 72 2861, Version A, dated April 24, 2015.

(ii) Reserved.

(3) For Turbomeca S.A. service information identified in this AD, contact Turbomeca S.A., 40220 Tarnos, France; phone: 33 0 5 59 74 40 00; fax: 33 0 5 59 74 45 15.

(4) You may view this service information at FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on February 18, 2016.

Ann C. Mollica,
Acting Manager, Engine & Propeller Directorate,
Aircraft Certification Service.
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